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An Paper March 1828

Essay

on the  
Pathology of Haemorrhage

By

James Jordan Vernon

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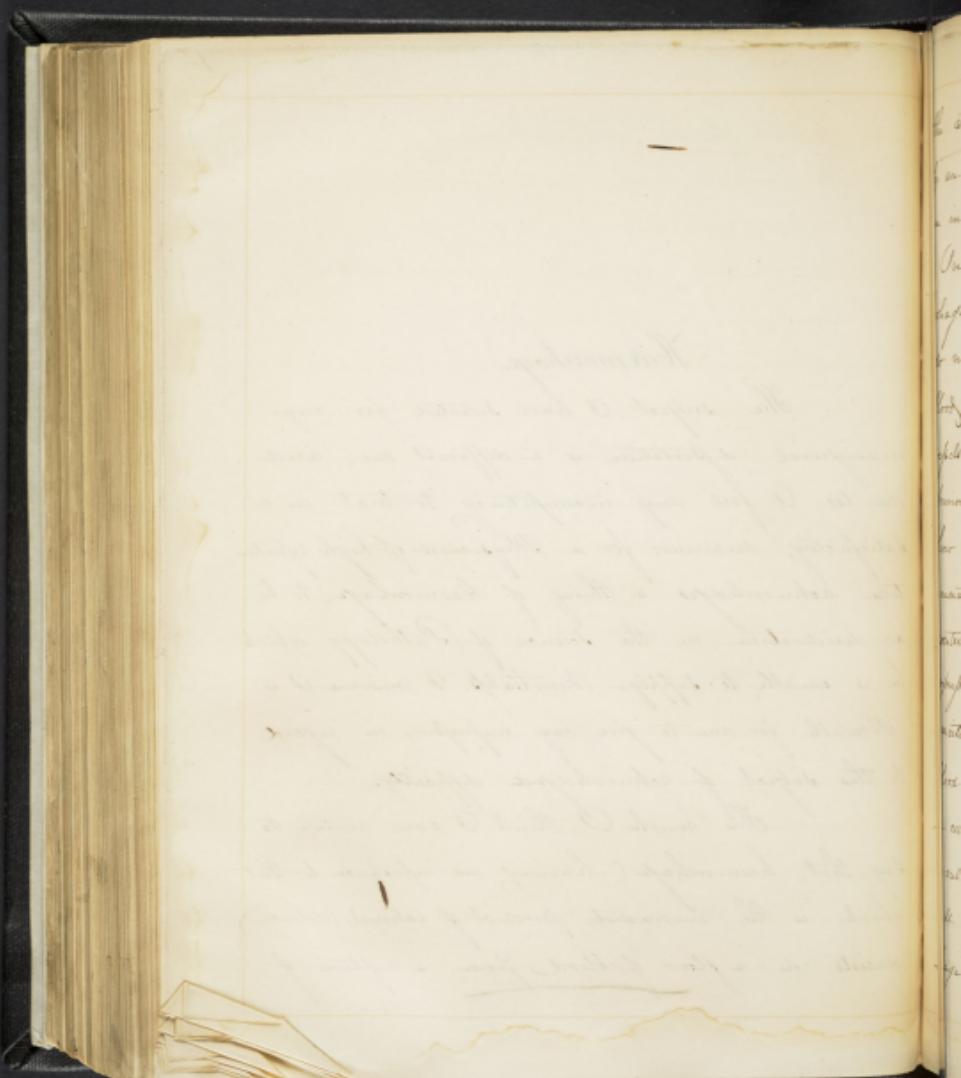
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## Haemorrhage.

The subject I have selected for my  
inaugural dissertation is a difficult one; and  
ne'er I feel my incompetency to treat in a  
satisfactory manner, for a Physician of high reputa-  
tion acknowledges a theory of Haemorrhage, to be  
a desideratum in the science of Pathology which  
he is unable to supply - Nevertheless, I presume it is  
allowable for me to give my impression in regard  
to this subject of acknowledged difficulty.

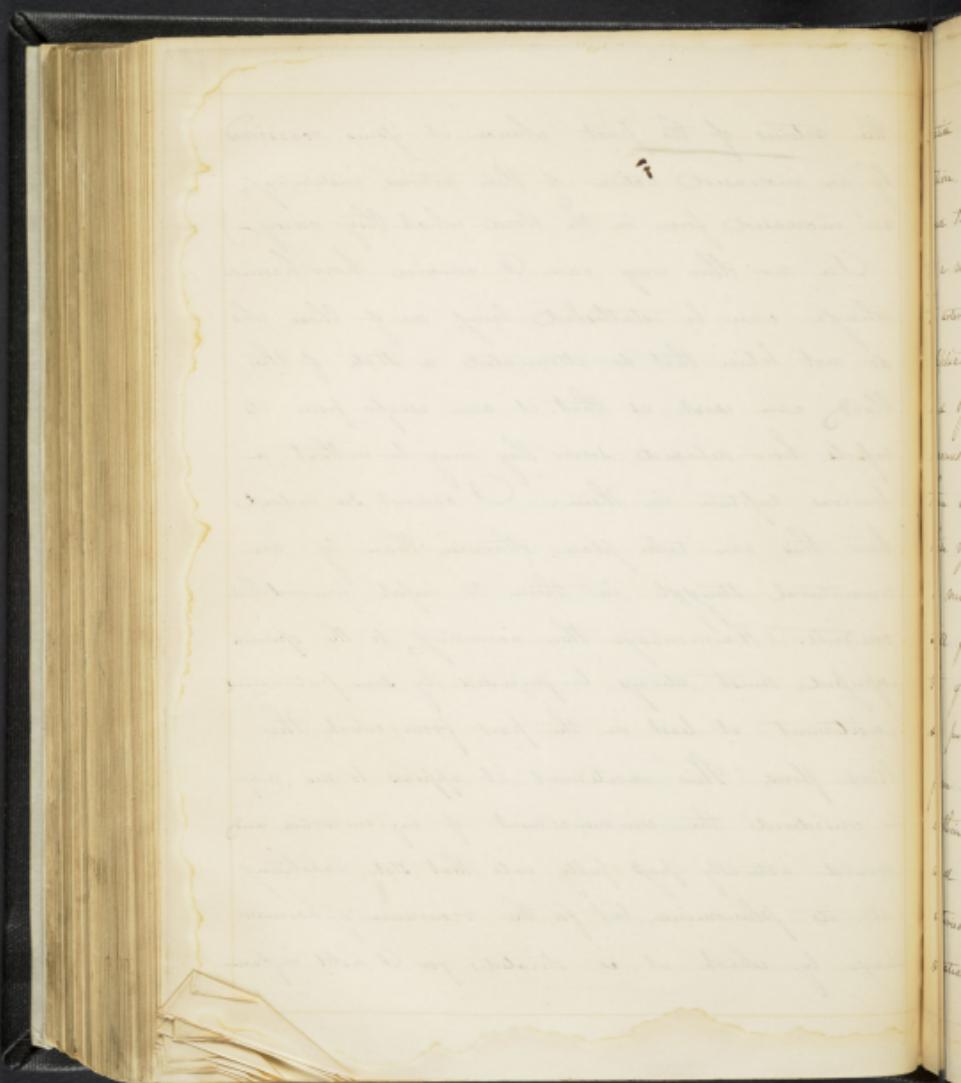
This much I think I can venture to  
say, that haemorrhage (having no reference to that  
which is the immediate product of external violence)  
consists in a flow of blood from a rupture of



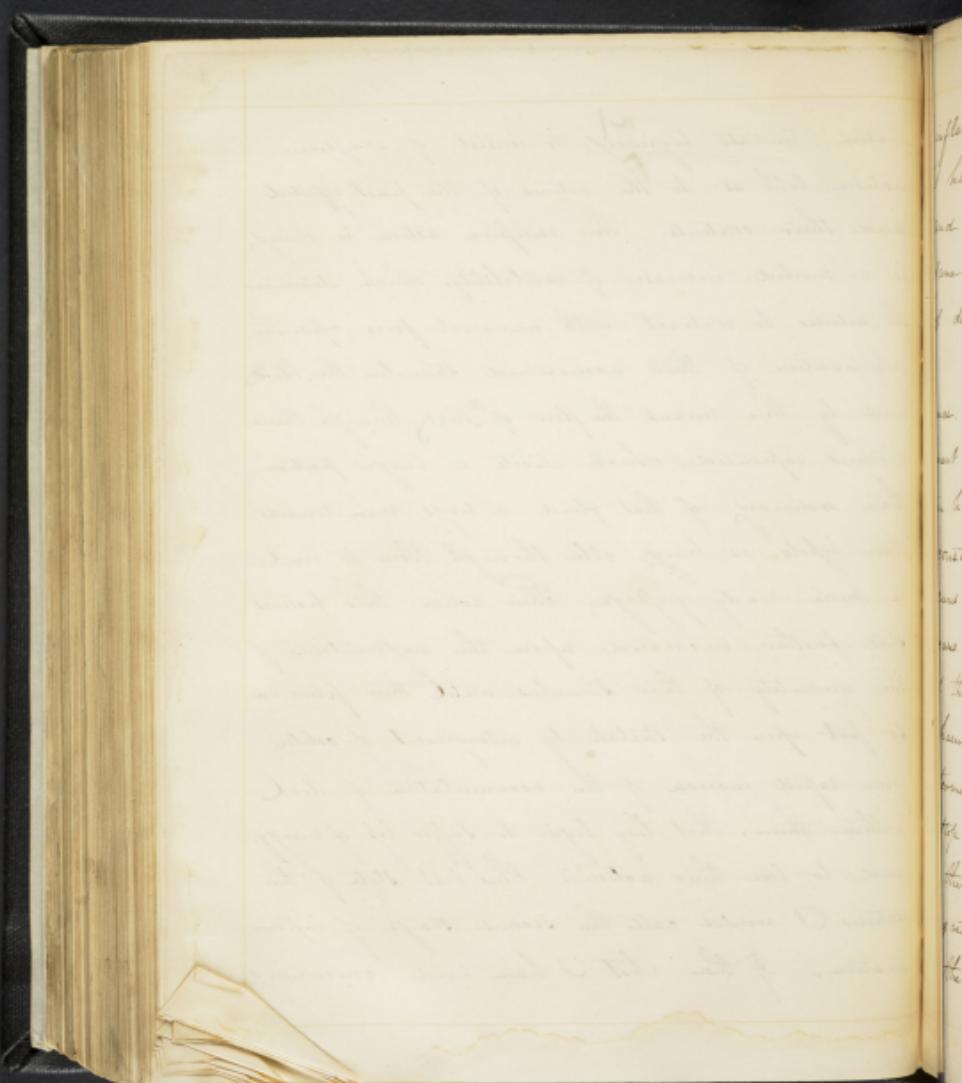
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the arteries of the part whence it issues, occasions by an increased action of those arteries, instituting an increased force in the blood which they carry.)

In no other way can I conceive how haemorrhage can be established, being one of those who do not believe that so attenuated a state of the blood can exist as that it can escape from its vessels, how relaxed sever they may be without a previous rupture in them. I cannot see indeed how this can take place, otherwise than by an unnatural struggle in them to impel forward their contents. A hemorrhage then according to the opinion expounded, must always be preceded by some internal excitement at least in the part from which the blood flows. This excitement it appears to me may be considered the commencement of inflammation and would actually pass fully into that state constituting all its phenomena, but for the occurrence of haemorrhage by which it is arrested; for I hold inflam-



uation in its beginning, to consist of exsiccating action, both as to the arteries of the part affected and their contents. This exsiccative action is owing to a morbid increase of excitability, which determines the arteries to contract with unusual force upon the application of their accustomed stimulus. Stimulus the blood and by this means the flow of <sup>the</sup> blood through them becomes expedited, which diverts a larger portion than ordinary of that fluid a large mass towards the vessels as being able through them to find a more ready passage. Their action thus becomes still further increased upon the augmentation of the quantity of their stimulus, until their fibres are so put upon the stretch by enlargement of calibre from rapid increase of the accumulation of blood within them, that they begin to suffer loss of energy and to lose their action. This last state of the arteries I would call the second stage of inflammation. If then what I have said concerning



inflammation be correct, except what I have already stated to usher in haemorrhage, and incipient inflammation, are one and the same thing, it being difficult to draw a line of distinction between them.

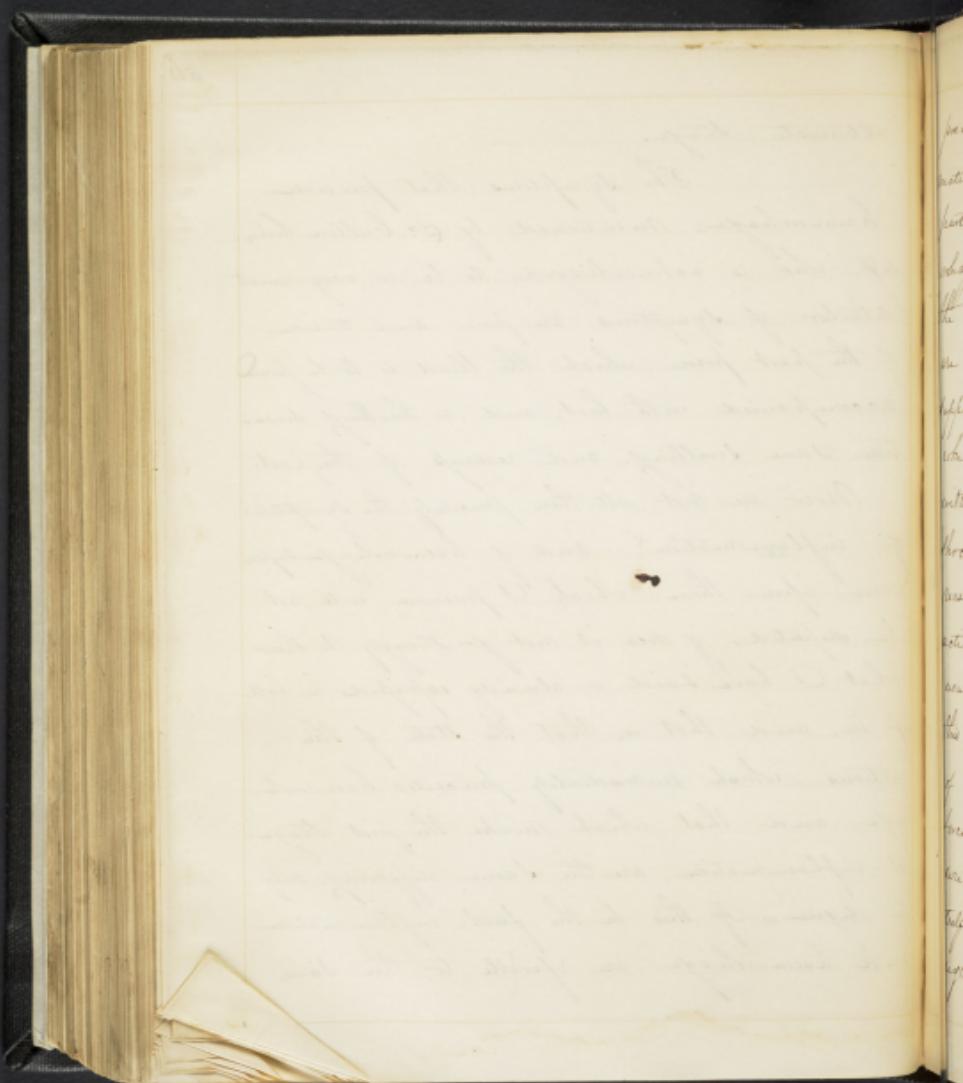
The difference and only difference, I think, between the two is, that the excitement which leads to the rupture of the arteries in haemorrhage, is more violent than that which constitutes the first stage of what afterwards runs into complete inflammation. In both cases, the vessels struggle hard to relieve themselves of their increasing contents, but in the case of haemorrhage, the struggle is so severe as to terminate in the rupture of the arteries and a stop is thus put to a further progress of the inflammation: if the action be not so great as to produce lesion of the arteries, the inflammation may advance to its

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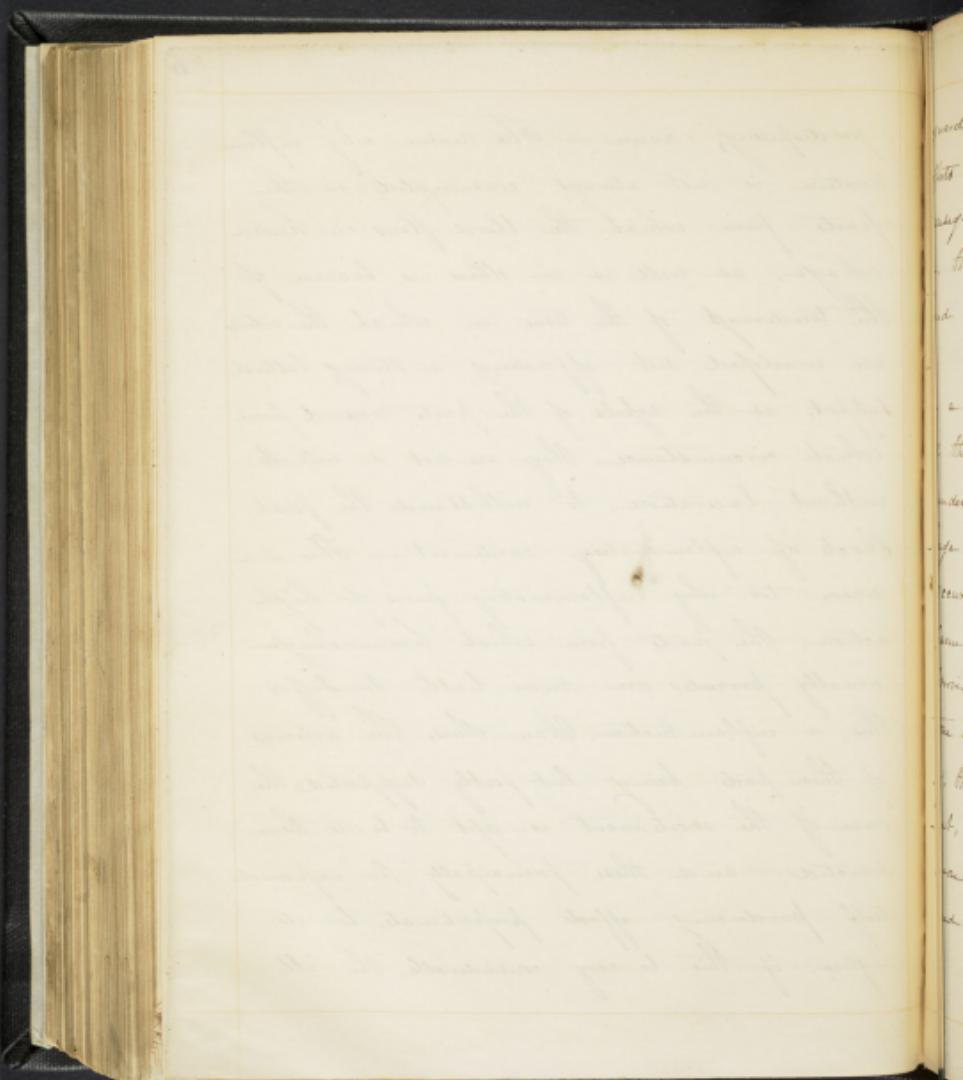
ultimate Stage.

The Symptoms that precede haemorrhage, mentioned by Dr. Cullen him-  
self, who is acknowledged to be a very com-  
petent detailer of symptoms, are pain and tension  
of the part from which the blood is to be found  
accompanied with heat, and a throbbing sensa-  
tion. Some swelling, and redness of the part,

Now are not all these precisely the symptoms  
of inflammation? and if haemorrhage supervene  
upon them, which I presume will not  
be disputed, does it not go strongly to show  
what I have said or already expyed a lit.  
of in., and that is, that the state of the  
arteries which immediately precedes haemor-  
rhage, and that which make the first stage  
of inflammation, are the same differing only  
in degree - If this be the fact, inflammation  
and haemorrhage are convertible to the same



predisposing cause — The reason why inflammation is not always consummated in the parts from which the blood flows in haemorrhage, at well as in others is because of the tenderness of the tissue in which the arteries are enveloped not affording a strong lateral support; as the vessels of the parts receive from which circumstance they are not so well able without laceration, to withstand the first shock of inflammatory excitement — This is a reason too why inflammatory furs of high action, the parts from which haemorrhage usually proceeds are more liable to suffer this or inflammation, than others. The arteries of these parts being but fully supported the force of the excitement is apt to be to them directed and these principally to expand itself producing effects proportionate to its degree; if this be very considerable, the ill

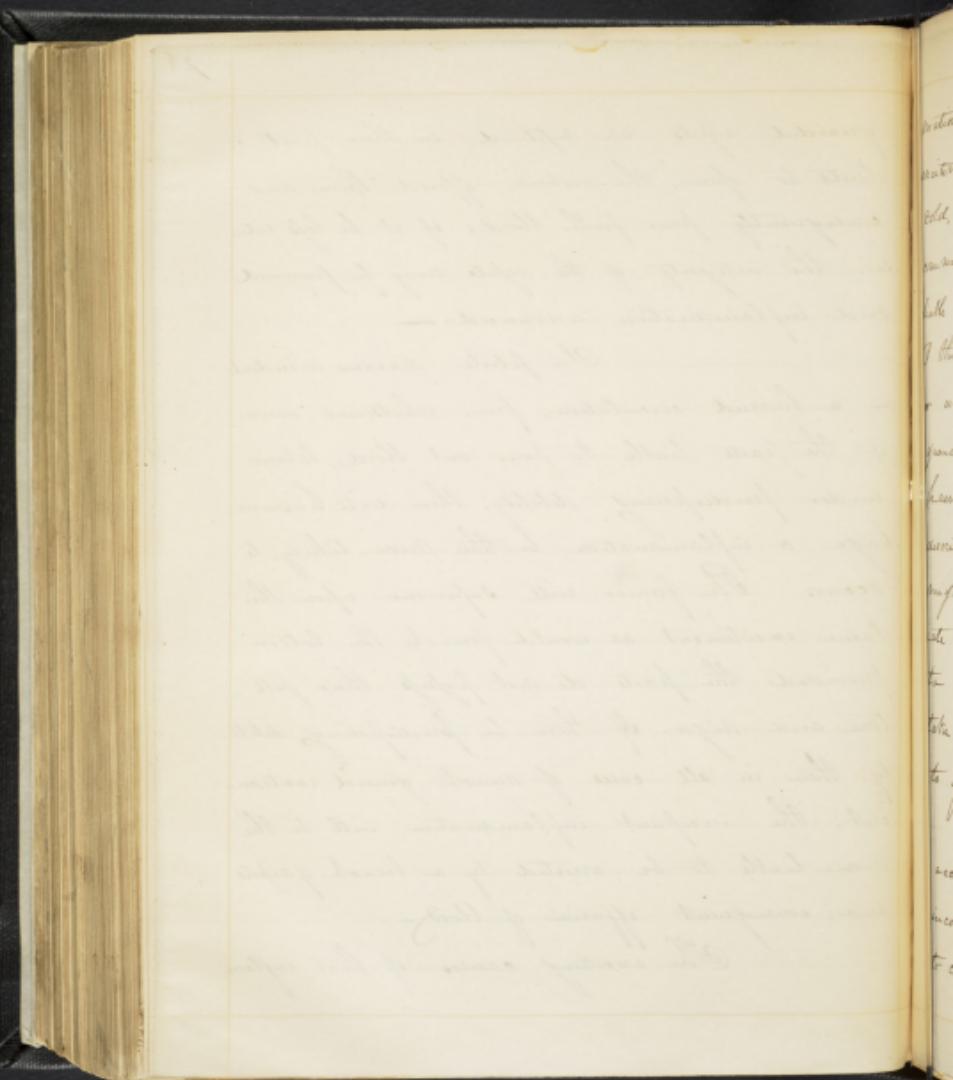


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guarded vessels are ruptured in their first efforts to gush, the violence offered them and consequently pour forth blood; if it be left interior, the integrity of the vessels may be preserved but inflammation advanced —

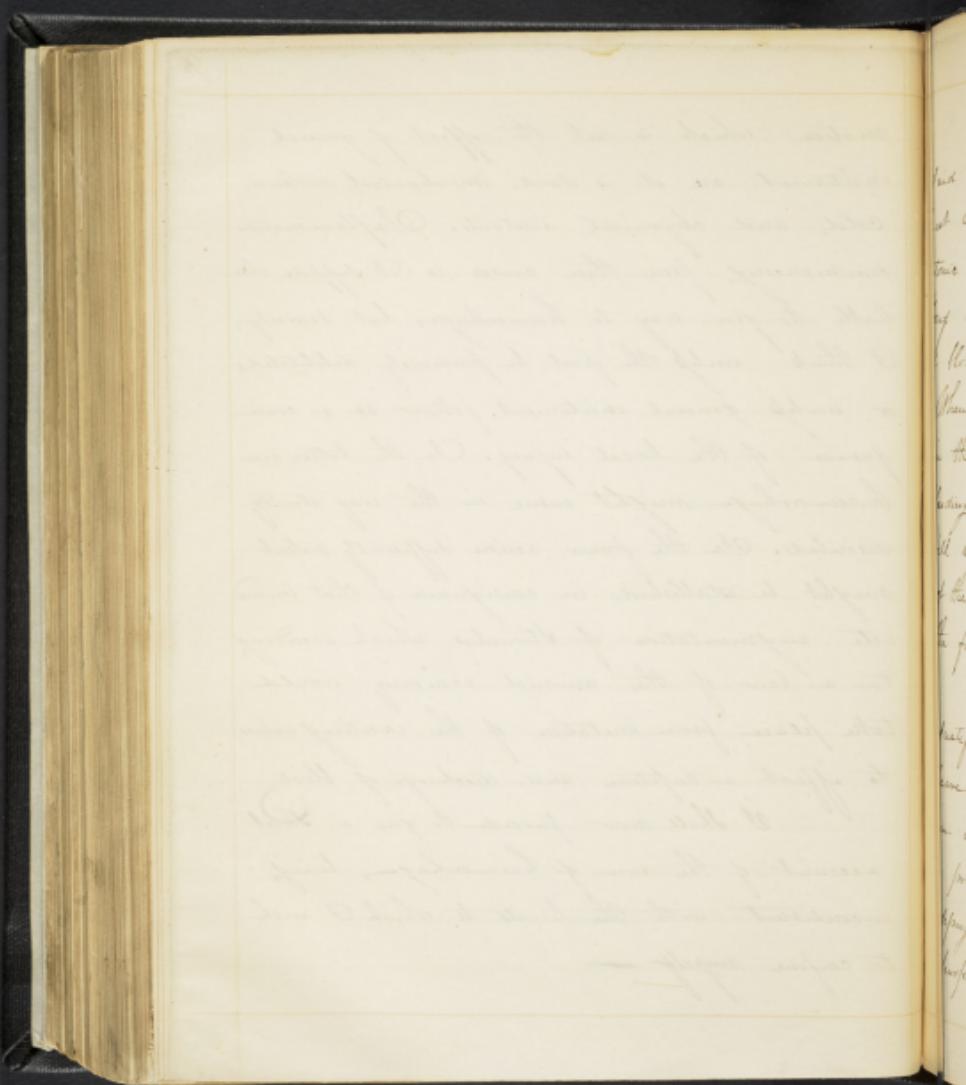
In febrile diseases or indeed in a hurried circulation, from whatever cause, if the parts liable to pour out blood, labour under predisposing ability, then will haemorrhage or inflammation be the more likely to occur. The former will supervene upon the same excitement as would provoke the latter provided the parts do not possess their full tone and vigor. If there be predisposing ability, then in all cases of much general excitement, the incipient inflammation will be the more liable to be arrested by a break of vessels and consequent effusion of blood —

The exciting causes of that inflam-



mation which is not the effect of general excitement, are it is said, mechanical violence, cold, and chemical irritants. Inflammation commencing from these causes is I suppose also liable to give way to haemorrhage, but scarcely, I think unless the part be previously debilitated, or unless general excitement follow as a consequence of the local injury. In the latter case haemorrhage might occur in the way already described. In the former, action sufficiently violent might be established in consequence of that immediate augmentation of stimulus, which according to a law of the animal economy would take place from irritation of the exciting cause, to effect a rupture and discharge of blood.

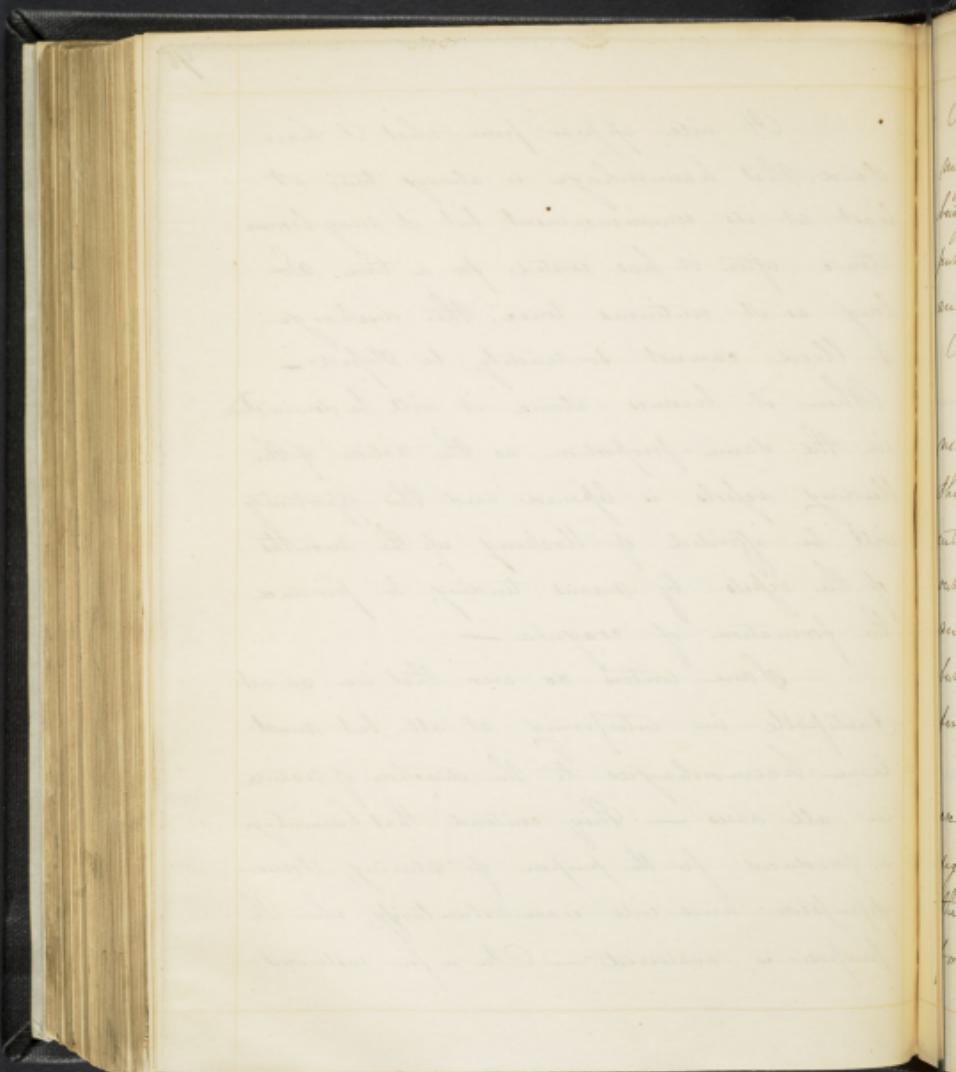
I shall now proceed to give a short account of the cure of haemorrhage, being inconsistent with the limits to which I wish to confine myself —



It will appear from what I have said that haemorrhage is always tonic at least at its commencement, but it may become stonic after it has existed for a time. So long as it continues tonic, the discharge of blood cannot so readily be stopped —

When it becomes stonic it will be diminished in the same proportion as the action of the bleeding vessels is opened and this opportunity will be afforded of blocking up the mouths of the vessels by means tending to produce the formation of coagula —

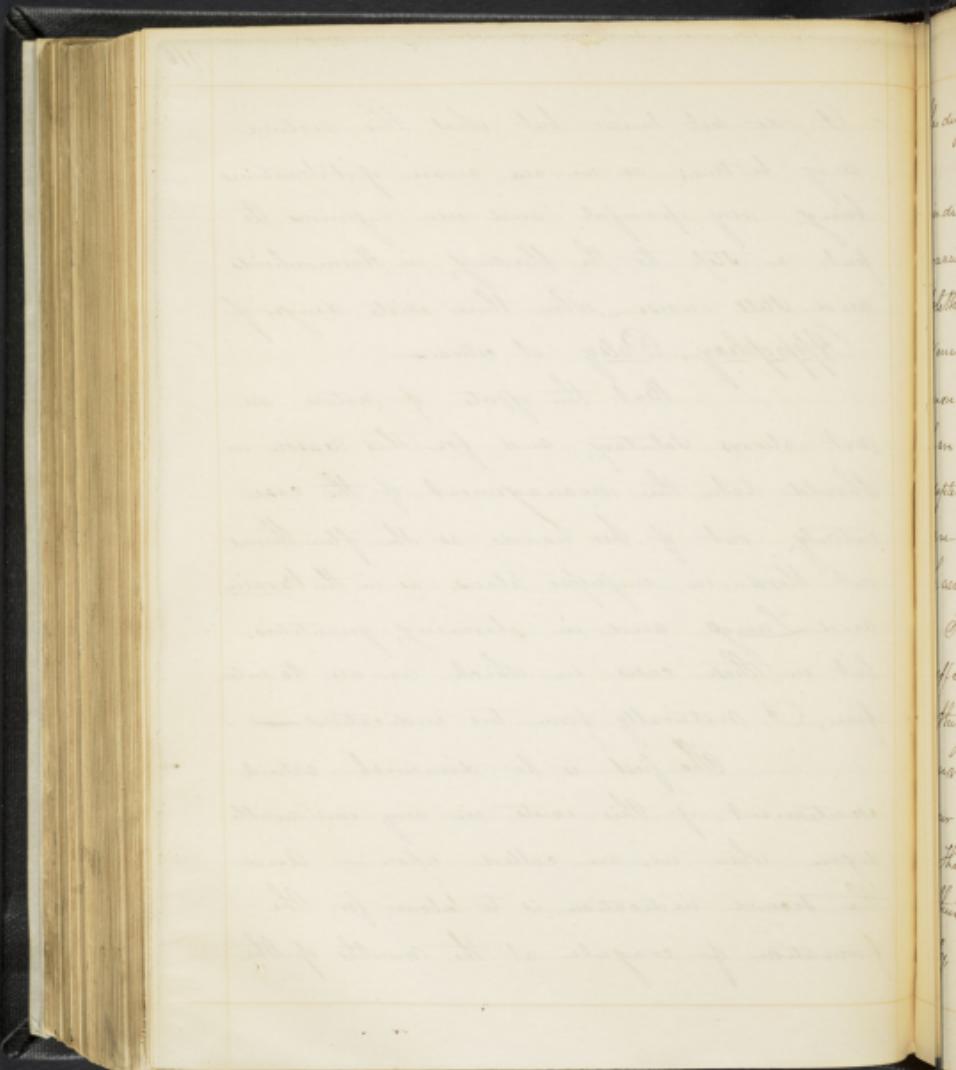
Some writers do aver that we can not interfere in interposing at all, but must leave haemorrhages to the direction of nature in all cases — They contend that haemorrhage is produced for the purpose of ridding some offusion, and will cease voluntarily when the purpose is answered — On a few instances



I do not know but what this doctrine may be true; as we are aware of it sometimes being very painful and even injurious to put a stop to the bleeding in Haemorrhoids and still worse when there exists danger of Hæmoplexy, Palsey &c cetera —

But the efforts of nature are not always satatory, and for this reason we should take the management of the case entirely out of her hands, as she often throws out Mord in improper places, as in the Brain, and Lungs and in alarming quantities; but in those cases in which we are to interfere, I naturally form two indications —

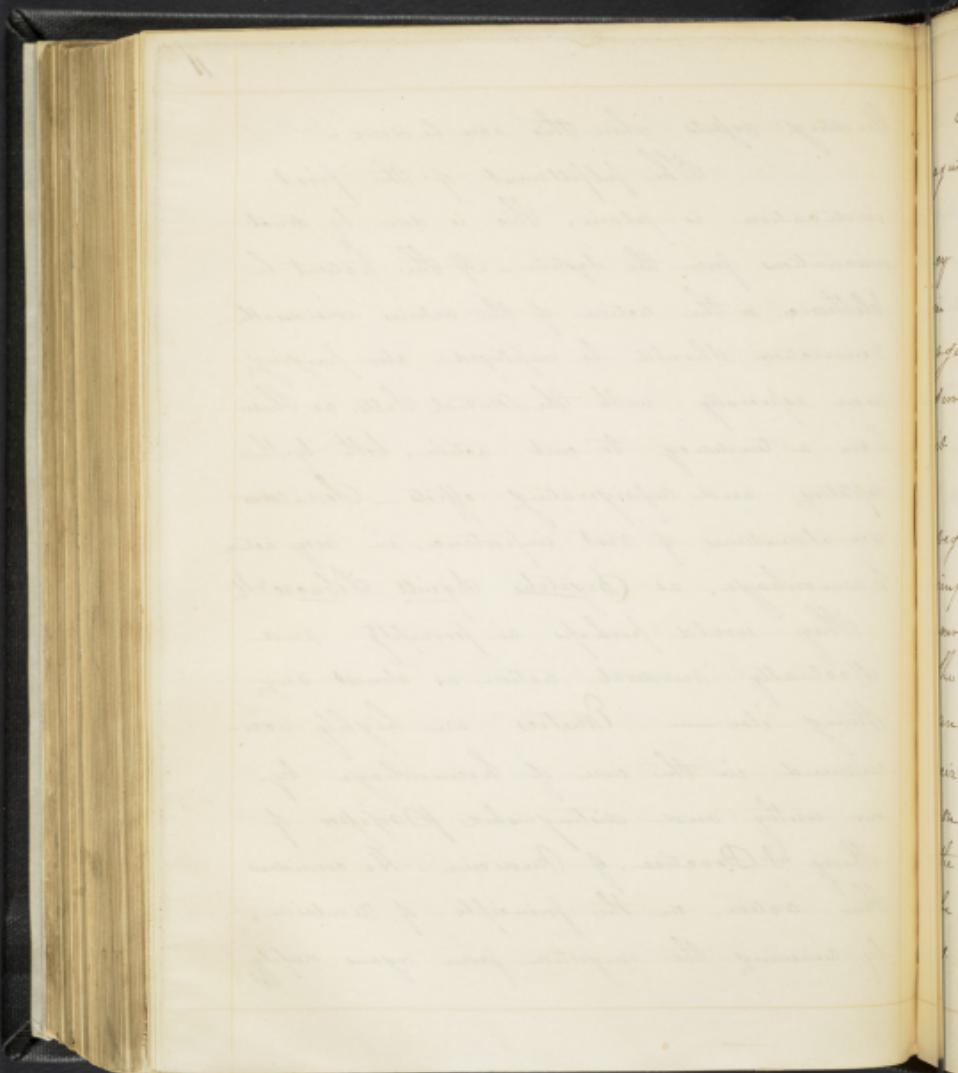
The first is to diminish ardour and excitement, if this exists in any considerable degree when we are called upon — And the second indication, is to labour for the formation of coagula at the mouths of the



bedayg copels when this can be done -

The fulfillment of the first indication is plain. This is done by direct evacuations from the system - If the patient be plethoric, or the action of the arteries considerate. Unresication should be employed, also purging, more especially with the Neutral Salts, as these have a tendency to curb action, both by their depleting and refrigerating effects - Sedatives are sometimes of vast importance in very active haemorrhage, as Digitalis Squill Tobacco &c.

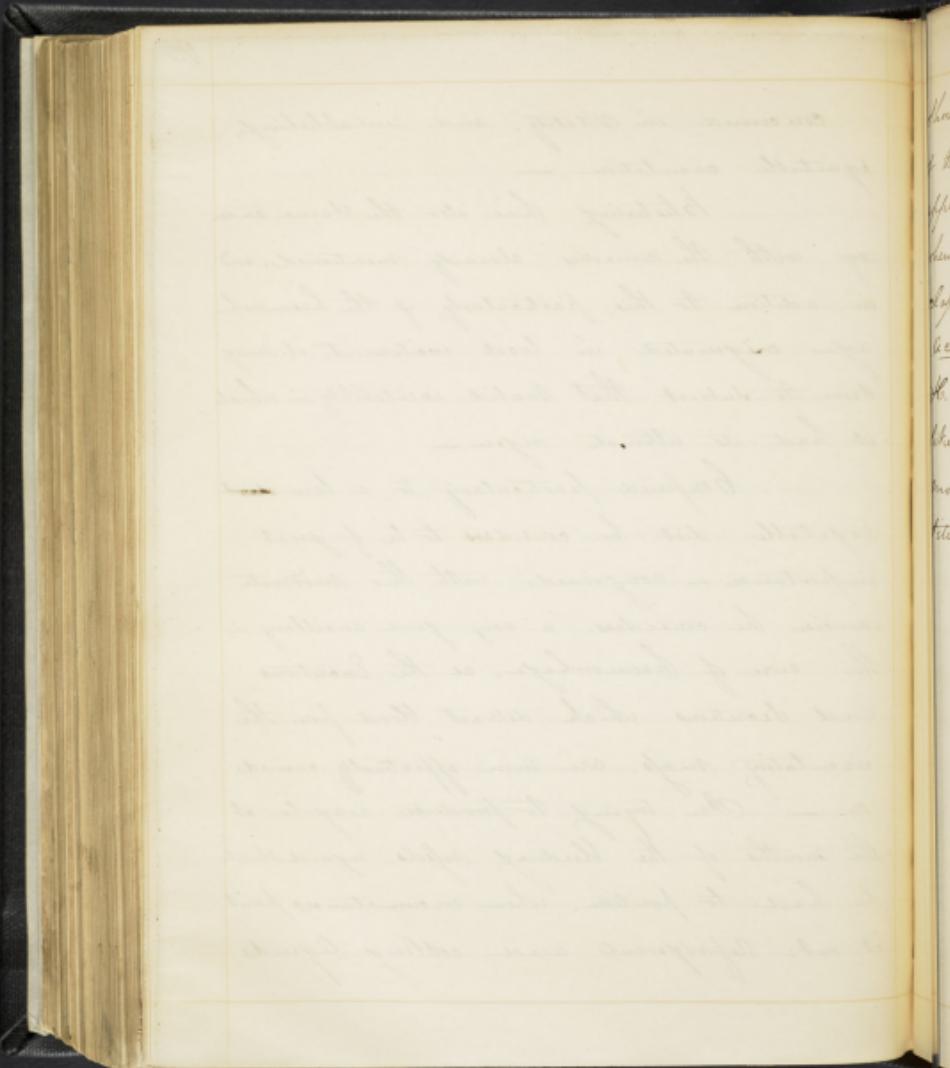
They would perhaps as promptly and effectually moderate action as almost any thing else - Emetics are highly recommended in the cure of haemorrhage by our worthy and distinguished Professor of Theory & Practice of Medicine. He considers their action, on the principle of revulsion; by removing the congestion from organs deeply



concerned in Vitality, and re-establishing  
equitable circulation —

Blistering has also the same tendency with the remedies already mentioned, and in addition to this, particularly if the haemorrhage originated in local excitement, it may serve to subvert that morbid excitability in which it had its ultimate origin —

Confin'd particularly to a low ~~and~~  
vegetable diet he considers to be of great  
importance — conjoined with this moderate  
exercise he considers, a very good auxiliary in  
the cure of haemorrhage, as the Excretions  
and Secretions which detract blood from the  
circulatory mass, are more effectually carried  
on — In trying to produce coagula at  
the mouths of the bleeding vessels, regard should  
be had to position, when circumstances point  
it out: Refrigerants and cooling liquids



Should be taken internally, together with some  
of the astringents, such as cold, and astringent  
applications which should be applied externally  
when practicable. The most conspicuous of this  
class of remedies is Bellum The Mineral  
Acids, Copper Zinc, preparations of Lead  
&c. Benefit would be likely to accrue  
likewise from suppurate made against the  
mouths of the bleeding vessels when the  
situation will admit —

